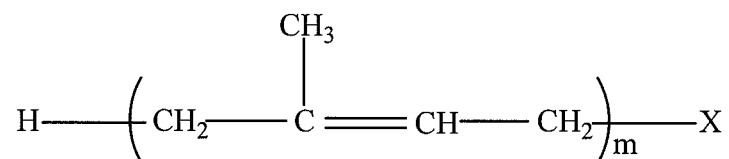


### AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application. Applicant has canceled Claims 20, 21, 50, 59 and 68, and added Claim 94. Further, Applicant has amended Claims 1, 7, 11, 12, 18, 19, 22-32, 35-37, 43, 51, 55-58, 60-65, 67, 69-74, 80, 85 and 87-91 in the following, in which added text is underlined and deleted text is stricken through.

1. (Currently amended) A composition comprising:  
 water;  
 an emulsifier; and  
 at least one compound represented by Formula I:

Formula I



wherein "m" is an integer from about 3 to about 33; and

wherein "X" is a substituent group selected from the group consisting of: (a) hydroxyl and acetyloxy; (b) halo; (c) formyl, mono-fluoroacetyloxy, trifluoroacetyloxy, monochloroacetyloxy, propionyloxy, butyryloxy, stearoyloxy, benzoyloxy, 3,5-dimethylbenzoyloxy, and 4-ethylbenzoyloxy; (d) methoxy, ethoxy, phenoxy, 2-pyridyloxy, 2-benzothiazolyloxy, 2-benzoxazolyloxy, trimethylsilyloxy, dimethyl t-butylsilyloxy, methylthio, ethylthio, phenylthio, tolylthio, 2-thiazolinylothio, 2-benzothiazolylothio, 2-benzoxazolylothio, and 2-pyridylthio; (e) dimethylphosphonoxy, diethylphosphonoxy, and diphenylphosphonoxy; (f) methylsulfinyl, ethylsulfinyl, propylsulfinyl, phenylsulfinyl, and 4-tolylsulfinyl; (g) methylsulfonyl, ethylsulfonyl, propylsulfonyl, phenylsulfonyl, and 4-tolylsulfonyl; (h) methoxycarbonyloxy, ethoxycarbonyloxy, propoxycarbonyloxy, phenoxycarbonyloxy, and 4-tolylloxycarbonyloxy; (i) N,N-dimethylcarbamoyloxy, N,N-diethylcarbamoyloxy, N,N-dipropylcarbamoyloxy, N,N-diphenylcarbamoyloxy, and N-phenyl-N-ethylcarbamoyloxy; (j) trimethylammonium bromide, triethylammonium iodide and diphenylethylammonium bromide; (k) dimethylsulfonium bromide, diethylsulfonium iodide, dipropylsulfonium bromide, and phenylethylsulfonium bromide; and (l) monophosphate, diphosphate, and triphosphate.

2. (Original) The composition of Claim 1, wherein "m" is from about 8 to about 23.

3. (Original) The composition of Claim 1, wherein "m" is from about 10 to about 18.

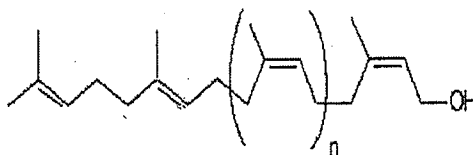
4. (Original) The composition of Claim 1, wherein the emulsifier comprises one or more selected from the group consisting octylphenol, polyoxyethylene, polyethyleneglycol fatty acid esters, ethylene glycol fatty acid esters, glycerol fatty acid esters, sucrose fatty acid esters, propylene glycol fatty acid esters, and sorbitan fatty acid or sorbitan fatty acid ester.

5. (Original) The composition of Claim 1, wherein the compound has a concentration from about 1 ppm to about 100 ppm.

6. (Original) The composition of Claim 1, wherein the compound has a concentration from about 0.01 wt% to about 80 wt% with reference to the total weight of the composition.

7. (Currently amended) A composition comprising:  
water;  
an emulsifier; and  
at least one compound represented by Formula II:

Formula II

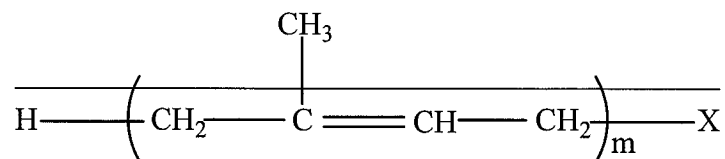


wherein "n" is an integer from 0 to about 30.

8. (Original) The composition of Claim 7, wherein "n" is from about 5 to about 20.  
9. (Original) The composition of Claim 7, wherein "n" is from about 7 to about 15.  
10. (Original) The composition of Claim 7, wherein the compound is undecaprenol or dodecaprenol.

11. (Withdrawn, currently amended) A method of treating a plant, comprising:  
providing a plant; and  
contacting the plant or a portion thereof with the composition of Claim 1. ~~at least one compound represented by Formula I:~~

Formula I



wherein "m" is an integer from about 3 to about 33;

wherein "X" is a substituent group selected from the group consisting of: (a) hydroxyl and acetyloxy; (b) halo; (c) formyl, mono fluoroacetyloxy, trifluoroacetyloxy, monochloroacetyloxy, propionyloxy, butyryloxy, stearoyloxy, benzoyloxy, 3,5 dimethylbenzoyloxy, and 4 ethylbenzoyloxy; (d) methoxy, ethoxy, phenoxy, 2-pyridyloxy, 2-benzothiazolyloxy, 2-benzoxazolyloxy, trimethylsilyloxy, dimethyl t butylsilyloxy, methylthio, ethylthio, phenylthio, tolylthio, 2-thiazolinylothio, 2-benzothiazolylothio, 2-benzoxazolylothio, and 2-pyridylthio; (e) dimethylphosphonoxy, diethylphosphonoxy, and diphenylphosphonoxy; (f) methylsulfinyl, ethylsulfinyl, propylsulfinyl, phenylsulfinyl, and 4 tolylsulfinyl; (g) methylsulfonyl, ethylsulfonyl, propylsulfonyl, phenylsulfonyl, and 4 tolylsulfonyl; (h) methoxycarbonyloxy, ethoxycarbonyloxy, propoxycarbonyloxy, phenoxycarbonyloxy, and 4 tolyloxycarbonyloxy; (i) N,N dimethylearbamoyloxy, N,N diethylearbamoyloxy, N,N dipropylearbamoyloxy, N,N diphenylearbamoyloxy, and N-phenyl N-ethylearbamoyloxy; (j) trimethylammonium bromide, triethylammonium iodide and diphenylethylammonium bromide; (k) dimethylsulfonium bromide, diethylsulfonium iodide, dipropylsulfonium bromide, and phenylethylsulfonium bromide; and (l) monophosphate, diphosphate, and triphosphate.

12. (Withdrawn, currently amended) The method of Claim 11, wherein the portion of the plant contacted with the composition compound is one or more selected from the group consisting of a seed, a shoot, a root, a leaf, a bulb, a fruit, a stem, a trunk, a stalk, a cane, a flower, a flower bud and a surface of the foregoing.

13. (Withdrawn) The method of Claim 11, wherein the plant is selected from the group consisting of vegetable or fruit plants, grain plants and ornamental plants.

14. (Withdrawn) The method of Claim 13, wherein the vegetable or fruit plants are selected from the group consisting of tobacco, grape, strawberry, tomato, bell tomato, cucumber, potato, radish, cabbage, bean sprout, red pepper and spinach; wherein the grain plants are selected

from the group consisting of rice, barley, corn, millet, bean and wheat; and wherein the ornamental plants are selected from the group consisting of chrysanthemum, rose, lily and gerbera.

15. (Withdrawn) The method of Claim 11, wherein "m" is from about 8 to about 23.
16. (Withdrawn) The method of Claim 11, wherein "m" is from about 10 to about 18.
17. (Withdrawn) The method of Claim 11, wherein "X" is hydroxyl or acetyloxy.
18. (Withdrawn, currently amended) The method of Claim 11, wherein the composition compound is contacted with the plant or a portion thereof in the form of liquid.
19. (Withdrawn, currently amended) The method of Claim 11, wherein the composition compound is contacted with the plant or a portion thereof in the form of powder.
20. (Canceled)
21. (Canceled)
22. (Withdrawn, currently amended) The method of Claim 11~~24~~, wherein the emulsifier comprises one or more selected from the group consisting octylphenol, polyoxyethylene, polyethyleneglycol fatty acid esters, ethylene glycol fatty acid esters, glycerol fatty acid esters, sucrose fatty acid esters, propylene glycol fatty acid esters, and sorbitan fatty acid or sorbitan fatty acid ester.
23. (Withdrawn, currently amended) The method of Claim 21, wherein the composition compound ~~contacting the plant or a portion thereof~~ has a concentration of the at least one compound from about 0.01 ppm to about 1000 ppm.
24. (Withdrawn, currently amended) The method of Claim 21, wherein the composition compound ~~contacting the plant or a portion thereof~~ has a concentration of the at least one compound from about 1 ppm to about 100 ppm.
25. (Withdrawn, currently amended) The method of Claim 11, wherein the composition compound is contacted with the plant or a portion thereof by sprinkling the composition in liquid or powder ~~comprising the compound~~ over the plant or the portion thereof.
26. (Withdrawn, currently amended) The method of Claim 11, wherein the composition compound is contacted with the plant or a portion thereof by immersing at least a portion of the plant in a liquid form of the composition ~~comprising the compound~~.
27. (Withdrawn, currently amended) The method of Claim 11, wherein the composition compound is contacted with the plant or a portion thereof by injecting at the composition ~~comprising the compound~~ into a body of the plant or the portion thereof.

28. (Withdrawn, currently amended) The method of Claim 11, further comprising cutting at least a portion of the plant so as to contact the composition compound with an interior of the plant.

29. (Withdrawn, currently amended) The method of Claim 11, further comprising peeling a skin of the plant or a portion thereof so as to ~~directly~~ contact the composition compound with an interior of the plant.

30. (Withdrawn, currently amended) The method of Claim 11, wherein the plant or a portion thereof is contacted with the composition compound one or more times.

31. (Withdrawn, currently amended) The method of Claim 11, wherein the plant or a portion thereof is contacted with the composition compound sporadically.

32. (Withdrawn, currently amended) The method of Claim 11, wherein the plant or a portion thereof is contacted with the composition compound periodically.

33. (Withdrawn) The method of Claim 11, further comprising maintaining the plant or a portion thereof in a condition sufficient to grow the plant.

34. (Withdrawn) The method of Claim 11, further comprising harvesting the plant or a portion thereof.

35. (Withdrawn, currently amended) A grown plant or a portion thereof,  
comprising:

a body of the plant or a portion thereof; and

a scientifically traceable amount of the composition of Claim 1 remaining in the  
body.

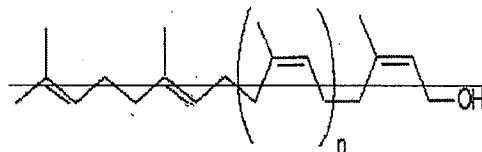
~~from the plant or the portion treated by the method of Claim 11.~~

36. (Withdrawn, currently amended) The plant of Claim 35, wherein the portion of the plant is one or more selected from the group consisting of a seed, a shoot, a root, a leaf, a bulb, a fruit, a stem, a trunk, a stalk, a cane, a flower, a flower bud and a surface of the foregoing, ~~and wherein the plant or the portion comprises a scientifically traceable amount of compound.~~

37. (Withdrawn, currently amended) A method of treating a plant, comprising:  
providing a plant; and  
contacting the plant or a portion thereof with the composition of Claim 7.

~~at least one compound represented by Formula II:~~

~~Formula II~~



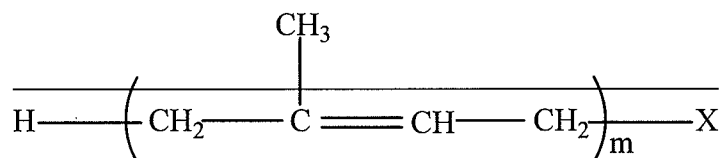
wherein "n" is an integer from 0 to about 30.

38. (Withdrawn) The method of Claim 37, wherein "n" is from about 5 to about 20.
39. (Withdrawn) The method of Claim 37, wherein "n" is from about 7 to about 15.
40. (Withdrawn) The method of Claim 37, wherein "n" is 8, 9 or 15.
41. (Withdrawn) The method of Claim 37, wherein the compound contacting with the plant or the portion thereof comprises one or more different forms thereof, and wherein the different forms of the compound have different "n".
42. (Withdrawn) The method of Claim 37, wherein the plant is selected from the group consisting of vegetable or fruit plants, grain plants and ornamental plants.
43. (Withdrawn, currently amended) A plant treated with a composition~~chemical compound~~, comprising:

a body of a plant, the body comprising an outer surface; and

the composition of Claim 1~~at least one compound of Formula I~~ on the outer surface;

Formula I



wherein "m" is an integer from about 3 to about 33;

wherein "X" is a substituent group selected from the group consisting of: (a) hydroxyl and acetyloxy; (b) halo; (c) formyl, mono-fluoroacetyloxy, trifluoroacetyloxy, monochloroacetyloxy, propionyloxy, butyryloxy, stearoyloxy, benzoyloxy, 3,5-dimethylbenzoyloxy, and 4-ethylbenzoyloxy; (d) methoxy, ethoxy, phenoxy, 2-pyridyloxy, 2-benzothiazolyloxy, 2-benzoxazolyloxy, trimethylsilyloxy, dimethyl t-butylsilyloxy, methylthio, ethylthio, phenylthio, tolylthio, 2-thiazolinylothio, 2-benzothiazolylothio, 2-benzoxazolylothio, and 2-pyridylthio; (e) dimethylphosphonoxy, diethylphosphonoxy, and diphenylphosphonoxy; (f) methylsulfinyl, ethylsulfinyl, propylsulfinyl, phenylsulfinyl, and 4-tolylsulfinyl; (g) methylsulfonyl, ethylsulfonyl, propylsulfonyl, phenylsulfonyl, and 4-

~~tolylsulfonyl; (h) methoxycarbonyloxy, ethoxycarbonyloxy, propoxycarbonyloxy, phenoxycarbonyloxy, and 4-tolylloxycarbonyloxy; (i) N,N-dimethylcarbamoyloxy, N,N-diethylcarbamoyloxy, N,N-dipropylcarbamoyloxy, N,N-diphenylcarbamoyloxy, and N-phenyl-N-ethylcarbamoyloxy; (j) trimethylammonium bromide, triethylammonium iodide and diphenylethylammonium bromide; (k) dimethylsulfonium bromide, diethylsulfonium iodide, dipropylsulfonium bromide, and phenylethylsulfonium bromide; and (l) monophosphate, diphosphate, and triphosphate.~~

44. (Withdrawn) The plant of Claim 43, wherein the plant body is one or more selected from the group consisting of a seed, a shoot, a root, a leaf, a bulb, a fruit, a stem, a trunk, a stalk, a cane, a flower and a flower bud.

45. (Withdrawn) The plant of Claim 43, wherein the plant is selected from the group consisting of vegetable or fruit plants, grain plants and ornamental plants.

46. (Withdrawn) The plant of Claim 45, wherein the vegetable or fruit plants are selected from the group consisting of tobacco, grape, strawberry, tomato, bell tomato, cucumber, potato, radish, cabbage, bean sprout, red pepper and spinach; wherein the grain plants are selected from the group consisting of rice, barley, corn, millet, bean and wheat; and wherein the ornamental plants are selected from the group consisting of chrysanthemum, rose, lily and gerbera.

47. (Withdrawn) The plant of Claim 43, wherein "m" is from about 8 to about 23.

48. (Withdrawn) The plant of Claim 43, wherein "m" is from about 10 to about 18.

49. (Withdrawn) The plant of Claim 43, wherein X is hydroxyl or acetyloxy.

50. (Canceled)

51. (Withdrawn, currently amended) The plant of Claim 4350, wherein ~~the non-Formula I substance comprises at least one of an~~ the emulsifier and water, which comprises one or more selected from the group consisting octylphenol, polyoxyethylene, polyethyleneglycol fatty acid esters, ethylene glycol fatty acid esters, glycerol fatty acid esters, sucrose fatty acid esters, propylene glycol fatty acid esters, and sorbitan fatty acid or sorbitan fatty acid ester.

52. (Withdrawn) The plant of Claim 43, wherein the compound on the outer surface is in a scientifically traceable amount.

53. (Withdrawn) The plant of Claim 43, wherein the compound is in an amount from about 0.001 $\mu\text{g}/\text{cm}^2$  to about 100 $\mu\text{g}/\text{cm}^2$ .

54. (Withdrawn) The plant of Claim 43, wherein the compound is in an amount from about  $0.01\mu\text{g}/\text{cm}^2$  to about  $10\mu\text{g}/\text{cm}^2$ .

55. (Withdrawn, currently amended) A method of producing ~~the~~ a chemical-compound-treated plant ~~of Claim 43~~, the method comprising:

providing ~~a~~ the plant body comprising ~~an~~ the outer surface; and

contacting the outer surface with the composition of Claim 1. ~~at least one of the compounds of Formula I.~~

56. (Withdrawn, currently amended) The method of Claim 55, wherein the composition ~~compound~~ is contacted with the plant body in the form of liquid.

57. (Withdrawn, currently amended) The method of Claim 55, wherein the composition ~~compound~~ is contacted with the plant body in the form of powder.

58. (Withdrawn, currently amended) The method of Claim 55, wherein the emulsifier comprises one or more selected from the group consisting octylphenol, polyoxyethylene, polyethyleneglycol fatty acid esters, ethylene glycol fatty acid esters, glycerol fatty acid esters, sucrose fatty acid esters, propylene glycol fatty acid esters, and sorbitan fatty acid or sorbitan fatty acid ester. ~~compound is contacted with the plant body along with at least one non-Formula I substance.~~

59. (Canceled)

60. (Withdrawn, currently amended) The method of Claim 58, wherein the composition ~~compound~~ ~~contacting the plant body~~ has a concentration of the at least one compound from about 0.01 ppm to about 1000 ppm.

61. (Withdrawn, currently amended) The method of Claim 58, wherein the composition ~~compound~~ ~~contacting the plant body~~ has a concentration of the at least one compound from about 1 ppm to about 100 ppm.

62. (Withdrawn, currently amended) The method of Claim 55, wherein the composition ~~compound~~ is contacted with the plant body by sprinkling a liquid or powder form of the composition ~~comprising the compound~~ over the plant body.

63. (Withdrawn, currently amended) The method of Claim 55, wherein the composition ~~compound~~ is contacted with the plant body by immersing at least part of the plant body in a liquid form of the composition ~~comprising the compound~~.



64. (Withdrawn, currently amended) The method of Claim 55, wherein the plant body is contacted with the composition compound-one or more times during a life thereof.

65. (Withdrawn, currently amended) The method of Claim 55, wherein the plant body is contacted with the composition compound-sporadically or periodically.

66. (Withdrawn) The method of Claim 55, further comprising maintaining the plant body in a condition sufficient to grow the plant.

67. (Withdrawn, currently amended) A polyprenol treated plant, comprising:  
a body of a plant, the body comprising an outer surface; and  
the composition of Claim 7 ~~polyprenol~~ on the outer surface.

68. (Canceled)

69. (Withdrawn, currently amended) The plant of Claim 67~~68~~, wherein "n" is from about 5 to about 20.

70. (Withdrawn, currently amended) The plant of Claim 67~~68~~, wherein "n" is from about 7 to about 15.

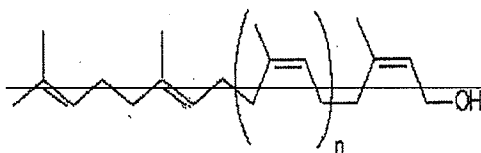
71. (Withdrawn, currently amended) The plant of Claim 67~~68~~, wherein "n" is 8, 9 or 15.

72. (Withdrawn, currently amended) The plant of Claim 67~~68~~, wherein the at least one compound ~~polyprenol~~ comprises one or more different forms thereof, and wherein the different forms of the polyprenol have different "n".

73. (Withdrawn, currently amended) The plant of Claim 67~~68~~, wherein the plant body is one or more selected from the group consisting of a seed, a shoot, a root, a leaf, a bulb, a fruit, a stem, a trunk, a stalk, a cane, a flower and a flower bud.

74. (Withdrawn, currently amended) A plant growth regulator for increasing crop yield of a plant, the regulator comprising the composition of Claim 7. ~~a compound represented by Formula II below:~~

Formula II



wherein "n" is 0 or a positive integer.

75. (Withdrawn) The plant growth regulator according to Claim 74, wherein "n" is 8 or 9.

76. (Withdrawn) The plant growth regulator according to Claim 74, wherein the plant is selected from the group consisting of vegetable or fruit plants, cereal plants, and flowering plants.

77. (Withdrawn) The plant growth regulator according to claim 76, wherein the vegetable or fruit plants are selected from the group consisting of tobacco, grape, strawberry, tomato, bell tomato, cucumber, potato, radish, cabbage, bean sprout, red pepper and spinach; wherein the cereal plants are selected from the group consisting of rice, barley, corn, millet, bean and wheat; and wherein flowering plants are selected from the group consisting of chrysanthemum, rose, lily and gerbera.

78. (Withdrawn) The plant growth regulator according to Claim 74, further comprising an emulsifier.

79. (Withdrawn) The plant growth regulator according to Claim 79, wherein the emulsifier comprises one or more selected from the group consisting octylphenol, polyoxyethylene, polyethyleneglycol fatty acid esters, ethylene glycol fatty acid esters, glycerol fatty acid esters, sucrose fatty acid esters, propylene glycol fatty acid esters, and sorbitan fatty acid or sorbitan fatty acid ester.

80. (Withdrawn, currently amended) A method of growing a plant, comprising:

providing a plant or a seed of a plant; and

applying ~~at the~~ plant growth regulator ~~according to Claim 74 to the~~ seed of a plant or a portion ~~thereof of the plant, wherein the plant growth regulator comprises the composition of Claim 7.~~

81. (Withdrawn) The method according to Claim 80, wherein the plant growth regulator is applied by immersing the seed in a liquid comprising the plant growth regulator.

82. (Withdrawn) The method according to Claim 80, wherein the plant growth regulator is applied by spraying the plant growth regulator onto the seed of the plant or the portion thereof.

83. (Withdrawn) The method according to Claim 80, wherein the portion of the plant is one or more selected from the group consisting of a shoot, a root, a leaf, a bulb, a fruit, a stem, a trunk, a stalk, a cane, a flower and a flower bud.

84. (Withdrawn) The method according to Claim 80, wherein the plant growth regulator is applied with a concentration of the compound at from about 0.01 ppm to about 1000 ppm.

85. (Withdrawn, currently amended) A method of obtaining the polyprenol composition of Claim 7, comprising:

providing part of a plant;

mixing the plant part with an organic solvent;

extracting organic substances from the plant part into the organic solvent, the organic substances comprising a polyprenol derivative; and

transforming the derivative to the at least one compound polyprenol in the presence of a base and a reducing agent.

86. (Withdrawn) The method of Claim 85, wherein the reducing agent comprises pyrogallol.

87. (Withdrawn, currently amended) The method of Claim 85, wherein the derivative comprises an is-acetylated polyprenol compound.

88. (Withdrawn, currently amended) The method of Claim 87, wherein the step of transforming comprises hydrolyzing the acetylated polyprenol compound.

89. (Withdrawn, currently amended) The method of Claim 85, further comprising isolating the polyprenol at least one compound.

90. (Withdrawn, currently amended) The method of Claim 85, wherein the at least one compound polyprenol comprises one or more different forms having different numbers of a repeated unit thereof.

91. (Withdrawn, currently amended) The method of Claim 85, further comprising powdering the at least one compound isolated polyprenol.

92. (Withdrawn) The method of Claim 85, wherein the plant is selected from the group consisting of a cotton plant, a horse chestnut plant, a tobacco plant, a lords and ladies plant, a silver birch plant, a ginkgo plant and a soybean plant.

93. (Withdrawn) The method of Claim 85, wherein the organic solvent is selected from the group consisting of ethanol, methanol, benzene and a mixture of one or more of the foregoing.

**Appl. No.** : **10/661,008**  
**Filed** : **September 11, 2003**

94. (Withdrawn, new) The method of Claim 89, further comprising mixing the emulsifier with the isolated compound.